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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,802	11/30/2001	Tetsuro Sato	108384-00034	2665

6449 7590 07/21/2003

ROTHWELL, FIGG, ERNST & MANBECK, P.C.
1425 K STREET, N.W.
SUITE 800
WASHINGTON, DC 20005

EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 07/21/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,802

Applicant(s)

SATO ET AL.

Examiner

Michael J Feely

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4,6,9-12 and 20 is/are allowed.
- 6) ☒ Claim(s) 5,7,8,13-19 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. The rejection of claims 7 and 8 under 35 U.S.C. 112, second paragraph, has been overcome.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a phenol novolak epoxy-curing-agent "comprised of one or two of melamine and benzoguanamine and a compound obtained from a condensation reaction of phenols and formaldehyde," does not reasonably provide enablement for an epoxy-curing-agent "selected from the group consisting of melamine, benzoguanamine, a compound obtained from a condensation reaction of phenols and formaldehydes, and combinations thereof." The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

On page 14 (lines 10-21) of the Specification, a phenol novolak compound is described as an epoxy-curing-agent. This phenol novolak compound contains triazine rings within its molecule. This phenol novolak is derived from a condensation reaction of phenols and formaldehyde. This condensation reaction is reacted with melamine or benzoguanamine to provide the triazine rings and the desired nitrogen content of 5 to 25 wt%. The Specification

fails to disclose the individual use of melamine, benzoguanamine, a compound obtained from a condensation reaction of phenols and formaldehydes, or combinations thereof.

5. Claims 7-8 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of producing a resin composition including a phenol novolak epoxy-curing-agent containing triazine rings within its molecule, wherein the phenol novolak has *a nitrogen content of 5 to 25 wt%*, does not reasonably provide enablement for a phenol novolak epoxy-curing-agent containing triazine rings within its molecule, having **any** nitrogen content. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

Claims 13-19 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for resin composition including a phenol novolak epoxy-curing-agent containing triazine rings within its molecule, wherein the phenol novolak has *a nitrogen content of 5 to 25 wt%*, does not reasonably provide enablement for a phenol novolak epoxy-curing-agent containing triazine rings within its molecule, having **any** nitrogen content. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

^{is}
Claim 21_A rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a printed wiring board having an interlayer dielectric comprising a resin composition including a phenol novolak epoxy-curing-agent containing triazine rings within its molecule, wherein the phenol novolak has *a nitrogen content of 5 to 25 wt%*, does not reasonably provide enablement for a phenol novolak epoxy-curing-agent containing triazine rings within its molecule, having **any** nitrogen content. The specification does not enable any person skilled in

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the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

One requirement for the instant invention is that the epoxy curing agent has a nitrogen content of 5 to 25 wt%. A preferred curing agent is a phenol novolak compound containing triazine rings, wherein the phenol novolak compound has a nitrogen content of 5 to 25 wt%. The claim language does not specify a nitrogen content. Although a phenol novolak compound containing triazine rings *can* have a nitrogen content of 5 to 25 wt%, it is not an inherent characteristic of this type of compound. It *could* also have a nitrogen content above or below 5 to 25 wt%. The Specification fails to disclose an embodiment that uses an epoxy curing agent having a nitrogen content outside of the 5 to 25 wt% range.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The rejection of claims 1 and 9-12 under 35 U.S.C. 102(b) as being anticipated by Ito et al. (US Pat. No. 5,932,637) has been overcome by amendment.

Allowable Subject Matter

7. Claims 1-4, 6, 9-12, and 20 are allowed.

8. Claims 5, 7, 8, 13-19, and 21 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action.

9. The following is a statement of reasons for the indication of allowable subject matter:

Applicant has amended claim 1 added new claim 20 to include the following components:

a) an epoxy based resin;

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- b) an epoxy resin curing agent containing 5 to 25 wt% nitrogen;
- c) maleimide compounds having thermosetting properties;
- d) polymers having crosslinkable functional groups within a molecule; and
- e) a crosslinker, which is added if necessary, wherein said resin composition is free of halogen.

As discussed in the previous office action, Ito et al. (US Pat. No. 5,932,637) is the closest prior art; however, they fail to teach or suggest components b) and d).

Claims 2-4, 6, and 9-12 are allowed because they depend on claim 1, and claim 5 is allowable because it depends on claim 1.

Claims 7, 8, 13-19, and 21 would be allowable if they were rewritten to include the nitrogen content limitation for the epoxy curing agent.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Michael J. Feely
July 15, 2003



Robert Dawson
Supervisory Patent Examiner
Technology Center 1700